“Improving Antimicrobial Use in Food Animal Production: Alternatives, Options and Incentives”

APUA-sponsored National Stakeholder Meeting
May 6-7, 2012, Omni Shoreham Hotel, Washington, DC

Purpose:
To establish a forum for open discussion among major stakeholders regarding feasible, concrete approaches to promote judicious use of antibiotics, in order to both preserve their efficacy to treat disease and ensure a safe, stable and affordable food supply.

Objectives:
- To evaluate feasible alternatives to current non-therapeutic/preventive antimicrobial use in food animal production, specifying barriers and opportunities;
- To propose incentives to promote improved practices and so minimize the need for use of antimicrobials;
- To propose an action plan, based on identified solutions.

Meeting Proceedings – Transcript Notes

Stuart Levy, Meeting co-chair, and President of APUA, welcomes the group – a full schedule, with APUA staff, Carol Cogliani and Sophie Matte presiding.

Joann Lindenmayer: Meeting co-chair and facilitator offers her pleasantries & thanks; described her role as a facilitator – not to express an opinion – and hoped that everyone felt comfortable in expressing their opinions and perspectives and hopes that we can all learn something from the meeting. She then elaborated on the meeting process. The point is to engage in dialogue and generative listening. (Explains the method to encourage dialogue.) Making non-judgmental statements – rather I feel uncomfortable with what you said. It is also important to identify underlying assumptions. She explained that except for the working groups, all of the sessions would be taped. Everyone will have an opportunity to review all material before it goes into a report. The expected outcomes are recommendations that we can agree on. Put assumptions in a parking lot. Ask people to take a piece of paper and 1) write down a group that best characterizes the stakeholder group that they belong to, 2) other group that least represents your perspective, and 3) one myth the other group holds about your group. She felt this exercise to be very enlightening.

1st presentation
Stuart B. Levy, MD
Opening Keynote: Ecology of Antibiotic Resistance
Drug resistance equation- bacteria have a fantastic ways of accumulating genetic material. If you add an antibiotic a particular kind of bacteria will become more prominent. Bacteria exchange genetic material via plasmids, transposons, transducing phages, also via conjugation. 50 - 80% of antibiotics are used in animals. Antibiotic treatment of farm animals has an impact on fruits and soils – wildlife can pick it up. Scientific evidence indicates a ripple effect from animal to person and backward (cites Marshall & Levy article in Clinical Microbiology Reviews, 24:4:718-733 ).

Emergence of resistance
Stuart cited the farm study (1970s) where he raised chickens from eggs to adults—gave half the chickens feed laced with oxytetracycline and the other half feed without tetracycline. They took fecal samples—as weeks went by you saw the emergence of resistance to multiple antibiotics—some of which were not even used. Resistance is all over—they could not track it to its source. The frequency of tetracycline resistant bacteria in human fecal samples was between 80 and 100% in 35% of the samples taken from farm families, 10% from neighbors, and 5% from Boston. No one was taking antibiotics in the farm family.

Amboseli Park, Kenya, where baboons were consuming human garbage at the lodge. There was a tremendous difference between the lodge group of baboons and the wild baboons (Alto & Hook). Almost 80% of the lodge group was 20% or more resistant; here the plasmids were small and plentiful. In the wild baboons, < 20% was 20% or more resistant; in this case, there were a small number of large plasmids—clearly reflective of the environment in which the wild baboons partake of their food. The lodge group—rummaging in the refuse—picked up resistance from antibiotics used by people—a secondary effect.

Antibiotic use has a global environmental impact. They are ecologic drugs, which “can alter the microbiology and levels of resistance vs. susceptible bacteria in any given environment.” Antibiotic use—preserving the power is goal and mission of APUA with chapters in 66 countries. Antibiotic use in the new millennium—“it shouldn’t be a war but making peace with bacteria.”